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*What Do
First-Year
Students Need
Most: Learning
Strategies
Instruction
or Academic
Socialization?*

This paper presents an analysis of two common seminar formats: those based on learning-strategies interventions and those based on academic-socialization interventions. The results of a natural experiment allowed a comparison of the retention impact of a strategy-based seminar and a socialization-focused seminar. For both more and less academically capable freshmen, one-year retention rates were higher for the strategy-based seminar. The retention advantage of the strategy-based seminar was evident even when effects of academic aptitude, high school class rank, gender, and ethnicity were statistically controlled. No evidence was found to support the claim that a socialization-focused, theme-based seminar selectively improved retention rates for more able students. In fact, the socialization-focused seminar condition was no more retention-effective than the no-seminar condition.

For more than 150 years, the faculty and administrators of American universities and colleges have debated the nature of the institutional support to be afforded students in making the transition to postsecondary education. In the ensuing efforts to win the hearts and minds of these new recruits, some educational theorists have focused on winning students' minds by developing their intellec-

tual competencies, and others have focused on winning students' hearts by socializing them into the culture and values of the Academy. Early in the history of Cornell University, its founder, Ezra Cornell, placed himself squarely in the learning strategies camp when he

approached the professor responsible for admissions decisions and asked why so many students failed to pass the entrance exam. The professor replied that they didn't know enough. Cornell then asked why the university could not teach the students what they did not know. The professor replied that the faculty was not prepared to teach the alphabet. "Can they read?" asked Cornell. The professor's response was that if Cornell wanted the faculty to teach spelling, he should have founded a primary school. (as cited in Casazza, 1999, p. 2)

Much more recently, the Boyer Commission on Educating Undergraduates in the Research University placed itself squarely in the academic socialization camp by recommending that

the focal point of the first year should be a small seminar taught by experienced faculty. The seminar should deal with topics that will stimulate and open intellectual horizons and allow opportunities for learning by inquiry in a collaborative environment. Working in small groups will give students not only direct intellectual contact with faculty and with one another but will also give those new to their situations opportunities to find friends and to learn how to be students. Most of all, it should enable a professor to imbue new students with a sense of excitement of discovery and the opportunities for growth inherent in the university experience. (Boyer, 1998, p. 20)

Despite the appealing image offered by the Boyer commission and despite the specter of spelling instruction raised by Ezra Cornell, the growing popularity of the academic socialization model warrants a closer examination of the relative virtues of the two models. We do that by offering first a brief history of courses for new freshmen and the philosophies that underpin them. We then present an empirical comparison of the two models at our own institution.

A Brief History of Transition Courses

In the mid 19th century, several American postsecondary institutions, notably Vassar College and Cornell University, began to provide for the needs of those students they considered academically underprepared—Vassar through establishing a preparatory program and Cornell by referring these students elsewhere (Stahl & King, 2000). However, special classes designed to equip and integrate, not just the underprepared but any first-year student into the university, followed closely behind. In 1882, Lee College in Kentucky instituted such a course (Barefoot & Fidler,

1996) followed by Boston University in 1868 and Iowa State University in 1900 (Gardner, 1986). Other colleges and universities followed suit, and by 1928, their numbers rose to over a hundred (Fitts & Swift, 1928; Schnell & Doetkott, 2003).

In a somewhat different sphere, and influenced by the findings of early behaviorists and time-motion studies, pioneers of the mid-20th century such as Frank Robinson (1941), a psychologist at Ohio State University, and Walter Pauk (1962), director of the Reading Study Center at Cornell University, devised freshman reading courses based on multiple-component strategies such as the SQ3R and OK4R for reading textbooks. These courses utilized state-of-the-art technologies such as tachistoscopes, perceptoscopes and controlled readers to forestall poor reading hygiene, such as regression of eye-movements (Wood, 1997). Since the days of those early reading and study skills classes, offerings of freshman courses have multiplied rapidly, with nearly three-quarters of colleges and universities now reporting that they offer some sort of first-year seminar (Skipper, 2002).

In the literature on first-year seminars, two types prevail: *learning strategies models* that attempt to teach students how to use powerful, active learning strategies, and *academic socialization models* that attempt to initiate students into the norms, values, and rituals of academia.¹ The academic socialization models include the extended-orientation format exemplified by *Freshman Year Experience* courses and the academic theme-based format. A national survey completed in 2001 (Swing, 2002, September 27) mentioned another type of seminar, the discipline-based theme format, which often exists as an introduction to a specific major within a college. Because these courses (e.g., "Introduction to Engineering") are usually designed to help students choose between disciplinary subspecialties and lack most of the relevant characteristics and goals that unite the other seminar types, we have made the somewhat arbitrary decision to exclude them from this review.

The Learning Strategies Models

The earliest freshman seminars were strategy-based, the direct descendants of the work and courses of Pauk and F. P. Robinson in the 1950s and 1960s. From this background, (cf. Wood, 1997), reading and study skills classes evolved in the decades of the 1970s and 1980s to include activities and materials based on the work of early cognitive psychologists (Just & Carpenter, 1980; Rosenblatt, 1978; Rumelhart & Ortony, 1977; Stanovich, 1980). With the influx of non-traditional students accompanying the opening of access to colleges in the 1970s, the pedagogy of such courses was also substantially influenced by the emerging research on

teaching adult learners and underprepared students of all ages (Cross, 1971; Maxwell, 1979).

During this period, the texts of Pauk (1962), Wood (1978), and later Ellis (1984) and Heiman and Slomianko (1988) often anchored such classes across the country. Later in the evolution, many of the strategy-based courses were reconceived as strategy-based freshman seminars. These courses typically included instruction in study skills, such as time management, lecture note-taking methodology, textbook-reading techniques and test-preparation and test-taking techniques. On occasion, they also included a mix of topics common to the academic socialization-focused, extended-orientation model: sexuality, financial matters, drugs and alcohol, and relationships. Contemporary findings in cognitive psychology also strongly influenced the content of the learning strategies seminars (McKeachie, Pintrich, & Lin, 1985). Enhanced effects were found when strategy instruction was carried out within the context of developing metacognitive skills and awareness, self-regulation skills, and the conditional knowledge to apply and tailor strategies to the demands of different content domains (Hattie, Biggs, & Purdie, 1996). The materials of both Weinstein and Heiman tended to base component study skills on this more universal understanding of the metacognitive learning principles underlying each strategy (Heiman & Slomianko, 1998; Weinstein, Dierking, Husman, Roska, & Powdrill, 1998).

The premise of the strategy-based seminar is that active learning skills can be taught. Cuseo (1997) argues that for many students, these skills represent new knowledge and are deserving of academic credit. Given the difficulty of improving institutional teaching practices (Kuh & Vesper, 1997), it is important for freshmen to develop the skills they need to thrive academically and to become active agents in their academic integration (Tinto, 1993) and persistence.

The Academic Socialization Models

The extended-orientation model. During the seventies and eighties, in parallel with the continuing evolution of strategy-based courses, a new type of seminar gained national prominence, partially in response to the student unrest of the sixties and early seventies and at least partially in response to the influx of a new and more diverse student body, often first-generation and non-traditional students less attuned to the culture of academia (Gahagan, 2002; Gardner, 1986; Schnell & Doetkott, 2003). These students needed more, it was reasoned, than just study skills or a brief orientation. They needed to be integrated into the culture of the university. They needed to become part of a community of learners (Gahagan, 2002; Gordon, 1989), to understand the history and values

of academia, to be able to access the resources of the university, and to plan and manage their time, relationships and finances. This type of seminar, often labeled extended-orientation or the Freshman Year Experience (FYE), began to overtake and, in some cases, eclipse or absorb the older freshman reading courses. This growth in popularity was in great part due to the publications and conferences of John Gardner, now head of the Policy Center on the First Year of College at Brevard College in North Carolina. The Center for the First Year Experience and Students in Transition at the University of South Carolina, also founded by Gardner, continues to act as a source of information and encouragement for both existing and fledgling first-year seminar programs.

Extended-orientation seminars initially included a very limited study skills component, but emphasized the history of education, especially the history of the home institution; group community building; library usage; and topics such as personal values and relationships, sexual and alcohol-drug awareness, managing money, and more recently, diversity awareness. Contemporary educational research on the influence and power of the community of peers (Gordon, 1989) is seen in the extended orientation's consistent emphasis on community-building activities.

Further supporting the extended-orientation format is the widely cited persistence model of Tinto (1993). The model, which is sociological in origin, proposes that departure decisions resulting from student *anomie* can be reduced if academic and social integration sufficient for institutional commitment is fostered early in the college experience. Despite the presumed importance of academic integration in the retention process (see Tinto, 1993, p. 169), the research of Braxton, Sullivan, and Johnson (1997) assigns more weight to the contribution of socialization factors to institutional commitment and subsequent persistence than to the contribution of academic integration. Their research would seem to support the effectiveness of the socialization thrust of the extended-orientation type of seminar in fostering persistence.

The convergence of models: strategy-based and socialization-focused, extended orientations. Models rarely remain pure in practice. Cross-fertilization between the learning strategy-based and the socialization-focused, extended-orientation formats has blurred the practical distinctions between these models over the years. Early in the process, socialization topics replaced some learning skills instruction as syllabi for strategies seminars added extended orientation topics (stress management, diversity awareness, community building, wellness, etc.).

Correspondingly, many extended-orientation seminars have increased their coverage of academic strategies. Since its first edition, the influential Gardner and Jewler text, *Your College Experience: Strategies for Success*

has expanded the learning skills coverage from a single chapter dealing with all study skills to four separate chapters covering lecture note taking, textbook reading, test taking and time management, plus learning styles, a topic intermediate between skills and extended orientation (Gardner & Jewler, 2002). In fact, the results of the 2000 Survey of First Year Seminar Programs showed that orientation goals are dropping in institutional topic listings and the focus on academic skills is increasing (Skipper, 2002, p. 89).

An example of the convergence of strategies and extended-orientation formats has been reported in the longitudinal study by Schnell and Doetkott (2003), where they alternately describe their university's course as an "extended orientation" (p. 379) and as an "academic skills seminar" (p. 384). A listing of the topics covered in the course, "campus resources and governance, study techniques, time management, test taking, note taking, goal setting, wellness, stress management and career orientation" (p. 386), shows the content to be divided between traditional learning strategies and historical extended-orientation topics. This amalgamation may, in fact, characterize many of the two-thirds of freshman seminars that are described as extended-orientation programs (Skipper, 2002; Swing, 2002, September 27). In fact, the most commonly reported goal of all the seminars surveyed in 2000 was to "develop academic skills" (Skipper, 2002, p. 16). However, what is meant by "academic skills" is not clearly defined within the survey.

The academic theme-based seminar. The most rapidly expanding form of first-year seminar is an academic-socialization model based around an academic theme (Skipper, 2002, p. 89), as recommended by the Boyer Commission. This academic theme may be common to the entire institution or may vary from one instructor to another. Most often, the themes of seminars vary according to the interests of the instructing faculty member. The academic theme-based freshman seminar, sometimes called a Freshman Interest Group or FIG, has coexisted for many years alongside the strategy-based and extended-orientation formats. The theme-based seminar model has become especially popular at selective research universities, such as the Universities of Washington and Pennsylvania. Within this model, faculty members are encouraged to carve out a section of their discipline that will be accessible to first-year students and to create a series of discussions and interactions around that theme. Examples of themes reported in the 2000 survey of freshman seminars were *Advertising and Pop Culture*, *Aliens and Others: What Does it Mean to be Human?*, *Beyond Barriers: Changed Lives*, and *The Computer: The Machine That Changed the World* (Mercer, 2002). Various texts and readings were utilized by those teaching the courses.

The structure and content of academic theme-based seminars promote a slightly different form of academic socialization than the extended-orientation seminar, as made explicit in the report of the Boyer Commission. According to that report, the ideal seminar should, "most of all, enable a professor to imbue new students with a sense of the excitement of discovery and the opportunities for growth inherent in the university experience" (Boyer, 1998, p. 20). While the Commission's statement makes passing reference to student-to-student interaction, the emphasis is clearly on the professor-centered academic integration of students into the culture and values of the research faculty mission. There is no insistence, as is the case with the extended-orientation seminar, on the community of peers as necessary for the successful social integration that is the second prerequisite for institutional commitment in Tinto's retention model.

The content of the academic theme-based seminar rarely includes such topics as stress management, money or relationship matters, or community building, which have long characterized the extended-orientation format. Nor do the theme-based seminars commonly offer instruction in learning strategies. Some theme-based seminars, especially those with variable themes, report an emphasis on academic writing (Skipper, 2002, p. 17), but instruction in writing is not usually provided in the seminar itself. The academic theme-based seminars may not, in fact, focus so directly on student persistence as on the goal of making the new student's academic experience more meaningful and connected (B. O. Barefoot, personal communication, July 18, 2003). Thus structured, the theme-based seminars are clearly efforts to inculcate the values and norms of the academic world, rather than efforts to develop student proficiencies in learning strategies.

Although the academic theme-based seminar is most often offered by selective institutions (Skipper, 2002) and has been recommended for students at research universities (Boyer, 1998), within the last several years, it has been adopted by a broad range of institutions. In an analysis of the results of the 2000 National Survey of First-Year Seminar programs, Skipper (2002) reported that 17% of all respondent institutions reported offering an academic theme-based model of the freshman seminar. While 71% of those institutions designated as highly selective reported using an academic content theme, 35% of moderately selective institutions and 11% of those with low levels of selectivity also reported utilizing this model designed for students at research universities (p. 15).

Each of the two major seminar models—the learning strategy-based and the academic socialization-focused—seems to be supported by coherent rationales that lead one to believe that either would be equally

useful in fostering those competencies, attitudes, and involvements which would lead to increased persistence. The question remains as to which is more appropriate for a given institution and its student body. In this article we describe how two very different types of seminars, one a relatively pure model of learning strategy-based philosophy and the other a relatively pure model of the academic socialization-focused philosophy, worked to keep our students enrolled in our institution.

Method

Two Freshman Seminar Models: A Natural Experiment

A combination of unexpected events put our university in the position of being able to take advantage of a natural experiment² on the relative effectiveness of the learning strategy-based and academic socialization-focused, theme-based seminar models in improving the one-year retention of freshmen. At the time of this study, all entering freshmen were required to obtain mandatory academic advising from professional advisors at the Tomás Rivera Center (TRC). Incoming freshmen in the fall semester 1999 were all given the option by these advisors to participate in two very different seminars, setting the stage for an evaluation using intact groups in a quasi-experimental design. One, the College Success Seminar, is strategy based and involves a systematic effort for students to develop an integrated set of learning strategies. The other, the Freshman Seminar, is socialization focused and designed to bring students close to a faculty member around an academic theme and to whet their intellectual curiosity. Thus, the stage was set for us to compare the relative effectiveness of the two models.

The most important outcome measure for us is one-year retention rates for first-time, full-time students admitted in good academic standing. These students are our largest constituency, and we are under a state mandate to enhance one-year retention and six-year graduation rates. In the context of academic success and persistence, the best early warning measure is first-semester academic status. Students completing their first semester with a GPA of 2.00 or better tend to remain in good academic standing; historically, 71% of these academically successful students return the following fall for their sophomore year. Students completing their first semester with a GPA of less than 2.00 are placed on academic probation and are subject to academic dismissal if their second-semester GPA is no better; historically, only 32% of these academically unsuccessful students return for a second year. We expected the present data to confirm that historical finding. However, we also hypothesized that the socialization-focused, theme-based seminar would be more effective in increasing the one-year retention rate for our initially more successful

students (those finishing their first semester in good standing) and that the strategy-based seminar would be more effective in increasing the one-year retention rate for our initially less successful students (those finishing their first semester on academic probation).

Student Population

Our institution is a comprehensive, public university with a total enrollment of approximately 23,000. Although we are seeking research status, our admissions standards remain minimally selective, with the median SAT Total for an entering freshman class averaging about 950 at the time of the study. Fifty-six percent come from populations underrepresented in higher education, and the great majority of these students are Hispanic and first-generation. Although ours is a commuter institution with an average student age of 25, the majority of freshmen are traditionally aged and come straight to us from high school. Our *Results of National Survey of Student Engagement: Fall 2002* also shows that our freshmen work off-campus at a rate far higher than the national sample or than our in-state cohort school sample (The University of Texas at San Antonio, 2003). For the time period of this study, the one-year retention rate for first-time, full-time freshmen was a problematic 56%—low, but comparable to that at similar institutions (see White & Mosely, 1995). At the time of the study, the TRC routinely computed student success measures for a standardized cohort of entering freshmen each fall semester. This standardized cohort each year includes only entering freshmen who meet the following criteria: (a) They have been admitted in good academic standing, (b) they have not previously attended any college, (c) they are registered for twelve hours or more in order to qualify as full-time students, and (d) they have not been admitted in any prior semester. In the Fall semester 1999, 1,499 entering students met these four criteria.

Procedure

Each freshman met individually in a small group with a professional advisor from the TRC during a summer orientation session in order to construct a fall schedule of classes. That fall, entering freshmen had the opportunity to take one of the five sections of the newly instituted Freshmen Seminars (each with an academic theme focus of interest to one of the five different faculty). Each freshman also had the opportunity to take one of the seven sections of the College Success Seminar (each taught by one of seven professional academic advisors in the TRC according to a standardized syllabus based on the strategy-based *Learning-to-Learn* textbook adopted for the first time that fall). Both courses were

limited to sections of 25. Academic advisors provided each freshman they counseled with a one-page description of the Freshman Seminar with the announced topics for each section as well as a one-page description of the College Success Seminar. Academic advisors had been asked to make freshmen aware of both options, but not to attempt to persuade them to take one option rather than the other. Advisors reported that freshmen appeared to be making their choices based on the day and time of the class meetings. Under these conditions, 66 first-time, full-time freshmen admitted in good academic standing elected to take the theme-based Freshman Seminar and 77 elected to take the strategy-based College Success Seminar. Two students elected to take both seminars and have been omitted from the analyses. As a result, the remaining 1,354 first-time, full-time freshmen admitted in good academic standing that fall afforded us an untreated comparison group (the *no-seminar* condition) as a baseline against which to assess the retention effectiveness of the strategy-based College Success Seminar and the socialization-focused Freshman Seminar.

The learning strategy-based seminar. In light of research indicating that traditional extended-orientation models did not always increase persistence (Davis, 1992; L. F. Robinson, 1989) for academically weaker students at a minimally selective institution like our own, our existing College Success Seminar was restructured as a strategy-based course. The restructured seminar emphasizes the modeling, practice, and application of learning strategies within an integrated and systematic approach for coping with a variety of classroom challenges. The textbook is *Learning to Learn* (Heiman & Slomianko, 1998), which anchors each learning strategy in an overarching metacognitive framework that students can internalize and adapt as necessary to different course content. The program presented in the book was endorsed for national dissemination by the U.S. Department of Education (Lang, 1995). The College Success Seminar is almost exclusively strategies oriented. Topics include time management, lecture note taking, textbook reading, creation of graphic organizers, test preparation, test taking, using library and campus resources, and analyzing different learning styles. At the time of the study, the seminar carried two elective credits and could only be taken for a grade (the seminar now carries three elective credits). Professional academic advisors trained in the *Learning-to-Learn* system taught these 25-student, two-credit-hour elective seminars.

The academic socialization-focused, theme-based seminar. The Freshman Seminar, a three-credit, academic theme-based seminar, was offered for the first time the same semester our restructuring of the College Success Seminar was completed. The theme-based seminar is

modeled on one offered at the flagship institution within our university system and counts as a core curriculum course for all of our students and can be taken only for a grade. Each of these theme-based Freshman Seminars is also limited to 25 students. These discussion-focused seminars are taught by specially selected faculty members or administrators and explore an interdisciplinary theme in the instructor's area of expertise and of particular relevance to freshman. Students are expected to do a great deal of writing in the course and to complete a term paper on a topic related to the seminar theme. Although these papers were expected to be well written, no actual writing instruction was provided in these seminars. Seminar topics that first semester were in the areas of biology, sociology, social work, politics and communications. No formal peer-instruction component is included in the course, but students are encouraged to interact with each other in class meetings and discussions, and several outside social activities are scheduled.

Participants

Although the TRC's academic advisors did not encourage students to take one seminar over the other, students did self-select into one of the three groups. For this reason, any subsequent differences among the three groups may arise from systematic differences among those electing a particular option. It should be reiterated that students in all three groups were first-time, full-time freshmen admitted in good academic standing. In order to examine the possibility that there are other important differences among those in the three groups, some key characteristics of freshmen in the no-seminar condition, the socialization-focused Freshman Seminar, and the strategy-based College Success Seminar are summarized in Table 1. The three groups differed overall in mean SAT Total scores, $F(2, 1190) = 14.98, p < .000$, but a post hoc Bonferroni test showed that the difference between the socialization-focused group and the strategy-based group was not significant at the .05 level. The groups also differed overall in high school percentile rank, $F(2, 1380) = 5.09, p < .01$, and the difference between the two seminar conditions was significant at the .05 level. Chi-square tests were used to assess differences among the three groups in gender and ethnic composition and in the rate of first-semester academic probation. The groups did not differ significantly in the proportion of females, $\chi^2(2) = 3.994, p < .20$. The three groups did differ significantly in ethnic composition, $\chi^2(4) = 10.873, p < .05$. However, this difference resulted from an overrepresentation of Hispanics and an underrepresentation of Whites in the two seminar conditions as compared to the no-seminar condition. The ethnic composition of the two seminar groups did not differ signifi-

Table 1
Characteristics of Freshmen Choosing to Participate in a First-Year Seminar Program or Not

Characteristic	Seminar Condition		
	No Seminar (<i>n</i> = 1354)	Socialization- Focused (<i>n</i> = 66)	Strategy- Based (<i>n</i> = 77)
Mean Total SAT Score	1002	959	920
High School Percentile Rank	34%	40%	29%
Percent Female	51%	49%	62%
Percent Hispanic	45%	55%	58%
Percent White	42%	33%	25%
Percent Black	7%	8%	10%
First Semester Probation Rate	40%	42%	36%

Note. All students in this analysis had been admitted in good academic standing for Fall 1999 on the basis of their SAT scores and high school class ranks; all were first-time, full-time freshmen with no prior college work and were taking 12 or more credit hours in the Fall 1999 semester.

cantly, $\chi^2(2) = 1.32$. Finally, the three groups did not differ overall in the rate of first-semester academic probation, $\chi^2(2) = 0.563$. In order to correct for any pre-existing differences among the three groups and to minimize the impact of these nuisance variables in assessing retention effects, SAT Total, high school percentile rank, gender, and ethnicity were included as factors in a supplementary regression analysis. These analyses also examine the main effect of first-semester academic status and its interaction with seminar condition.

Results

The pool of 1,499 students considered in this analysis were first-time college students who had been admitted in good academic standing for Fall 1999 and who qualified as full-time students by being enrolled for 12 or more credit hours by the census date for that semester (the twelfth class day). One-year retention was indexed as the number of students in that pool who were identified by the student records system as being enrolled for any courses on the census date for the subsequent fall semester 2000. Two students were excluded from this analysis because they were enrolled in both the theme-based seminar and the strategy-based seminar in their first fall semester. The proportion of freshmen re-enrolled for a subsequent fall semester is shown in Table 2 as a function of seminar

condition and first-semester academic status. Because the presence or absence of a student in the second fall semester is a dichotomous variable, the most appropriate method for testing relationships with this type of dependent variable is logistic regression (Agresti, 1996).

Table 2
One-Year Retention Rates for First-Time, Full-Time Freshmen as a Function of First-Semester Academic Performance and Seminar Condition

First-Semester Academic Status	Seminar Condition		
	No Seminar	Socialization- Focused	Strategy- Based
Good Standing (GPA 2.00 or Better)	.75 (n = 816)	.66 (n = 38)	.84 (n = 49)
Academic Probation (GPA Less Than 2.00)	.28 (n = 538)	.21 (n = 28)	.57 (n = 28)
Overall	.56 (n = 1354)	.47 (n = 66)	.74 (n = 77)

Logistic regression is a categorical data analysis analog of linear regression. Dependent variables are represented as the number of times an event occurs given the number of trials possible. In the present case, there is a single trial represented by the event of re-enrollment in the second fall semester, and the trial count is 0 or 1. Typically, tests of main effects, interactions, and non-directional contrasts are based on changes in model fit (analogous to changes in variance accounted for in ordinary linear regression). Fit is typically assessed using a likelihood-ratio test, the test statistic that is abbreviated as G^2 (Agresti, 1996).

Effects of Seminar Condition and First-Semester Academic Status on First-Year Retention

Retention of first-time, full-time freshmen admitted in good academic standing as a function of freshman seminar condition (no seminar, socialization-focused seminar, or strategy-based seminar) and first-semester academic status (remaining in good standing or being placed on academic probation) is summarized in Table 2. The dependent variable is whether a freshman enrolled the second fall semester. The model

statement for the logistic regression analysis includes terms for the seminar conditions, first-semester academic status, and interactions between these terms. The two dummy variables used in this analysis were strategy-based seminar or not and socialization-focused seminar or not, with the no-seminar condition serving as the reference variable. Significant effects were found for both seminar condition (change in $G^2(2, N = 1497) = 13.34, p < .002$) and academic status (change in $G^2(1, N = 1497) = 48.97, p < .001$). The interaction between seminar condition and first-semester academic status was not significant (change in $G^2(2, N = 1497) = 1.65, p < .20$).

Given the presence of pre-existing differences among the three groups, a second logistic regression analysis was conducted with gender, ethnicity, SAT Total scores, and square-root transformed high school rank percentiles entered as control variables. Although a significant correlation between high school rank and SAT Total might have affected the regression analysis by producing multicollinearity artifacts, the correlation between the two is low and nonsignificant, $r(1120) = .06$. Therefore, both variables were retained in model to provide a higher level of statistical control for pre-existing differences among the groups. The inclusion of these four terms in the model statement did not change the outcome of the analysis, and significant effects were again found for both seminar condition (change in $G^2(2, N = 1122) = 12.86, p < .002$) and academic status (change in $G^2(1, N = 1122) = 36.49, p < .001$). The interaction between seminar condition and first-semester academic status remained nonsignificant (change in $G^2(2, N = 1122) = 1.19, p < .20$).

The significant effect of academic status was due to the much higher retention rate for those freshmen who remained in good academic standing at the end of their first semester as compared to those who went on academic probation at that point ($M_s = 0.75$ and 0.27 , respectively). This finding confirms the utility of first-semester academic status as a powerful predictor of retention risk.

The significant main effect of seminar condition on freshman retention is of central interest. Several contrasts were computed to explore the nature of the effect. Overall, the one-year return rate was higher in the *strategy-based* seminar group than in the *no-seminar* group ($M_s = 0.74$ and 0.56 , respectively; contrast $G^2(1, N = 1497) = 10.90, p < .001$). The one-year return rate was also higher in the *strategy-based* seminar group than in the *socialization-focused* seminar group ($M_s = 0.74$ and 0.47 , respectively; contrast $G^2(1, N = 1497) = 11.24, p < .001$). However, the difference between the *no-seminar* group and the *socialization-focused* group was not significant ($M_s = 0.56$ and 0.47 , respectively; contrast $G^2(1, N = 1497) = 1.92, p < .20$). Including gender, ethnicity, high

school rank, and SAT Total scores as control variables in the model did not affect the contrast analyses. With these four factors entered into the analysis, the return rate was again significantly greater in the *strategy-based* seminar group than in the *no-seminar* group (contrast $G^2(1, N = 1122) = 8.57, p < .003$). The return rate was also significantly greater in the *strategy-based* seminar group than in the *socialization-focused* seminar group (contrast $G^2(1, N = 1122) = 11.94, p < .001$), and the higher return rate for the *no-seminar* group in comparison to the *socialization-focused* seminar group remained nonsignificant (contrast $G^2(1, N = 1122) = 3.54, p < .06$).

It is clear, therefore, that pre-existing SAT, class rank, gender, and ethnic differences between students in the two seminar conditions are not responsible for the observed retention advantage of the strategy-based seminar. Although it is possible that some other pre-existing difference between students in the two seminars is responsible for the greater retention effectiveness of the strategy-based seminar, these data strongly suggest that the observed effect is due to differences between the two seminars in the nature of the freshman experience they offer students.

The Interaction of Seminar Condition and First-Semester Academic Status

The absence of an interaction between seminar condition and academic status is of particular significance because socialization-focused seminars have been thought to be appropriate for more able students, and strategy-based seminars more appropriate for less able freshmen. As far as first-year retention rates are concerned, however, the foregoing analyses indicate that the strategy-based seminar in this study is more retention-effective for both more and less able freshmen. Given the importance of this finding, an additional analysis was conducted using SAT scores as the basis for identifying more and less able freshmen. In order to avoid statistical artifacts due to distribution differences within cells, SAT Total score was transformed into a dichotomous variable by splitting scores into high and low with respect to the overall median for the sample. The effect of seminar condition was significant in this analysis (change in $G^2(2, N = 1190) = 12.75, p < .002$), but the effect of dichotomized SAT Total was not (change in $G^2(1, N = 1190) < 1.00$). The interaction of seminar condition and SAT score was not significant (change in $G^2(2, N = 1190) < 1.00$). Contrast effects for the seminar condition paralleled those reported for academic status as a subject variable. The one-year return rate was significantly higher in the *strategy-based* seminar condition than in the *no-seminar* condition, contrast $G^2(1, N$

= 1190) = 9.25, $p < .002$, and significantly higher in the *strategy-based* seminar condition than in the *socialization-focused* seminar condition, contrast $G^2(1, N = 1190) = 11.88, p < .001$. The one-year return rate for the *no-seminar* condition was again higher than that for the *socialization-focused* seminar condition, but not significantly so, contrast $G^2(1, N = 1190) = 3.03, p < .08$.

Because the data in Table 2 indicate that the *strategy-based* seminar was more retention-effective than the *socialization-focused* seminar for both more and less able students, separate contrasts were computed to assess the significance of these differences. For students remaining in good academic standing at the end of their first semester, the retention rates were significantly higher for those in the *strategy-based* seminar than for those in the *socialization-focused* seminar ($M_s = 0.84$ and 0.66 , respectively, contrast $G^2(1, N = 903) = 3.73, p < .05$). For students placed on academic probation at the end of their first semester, the retention rates were also significantly higher for those in the *strategy-based* seminar than for those in the *socialization-focused* seminar ($M_s = 0.57$ and 0.21 , respectively, contrast $G^2(1, N = 594) = 7.70, p < .005$). The data clearly indicate that the *strategy-based* seminar provides superior retention benefits than the *socialization-focused* seminar for both more and less able freshmen.

Discussion

The outcome of the natural experiment reported here provides strong support for the retention impact of our *strategy-based* freshman seminar on first-time, full-time students admitted in good academic standing for our fall semester. Freshmen who enrolled in the *strategy-based* seminar were significantly more likely to re-enroll the following fall than were freshmen who enrolled in the *socialization-focused* seminar or in no seminar. Although the one-year retention effect for the *strategy-based* seminar produced a significant nine percentage-point increase in the retention rate for freshmen with first-semester GPAs equal to or greater than 2.00, the effect was three times larger for those freshmen with first-semester GPAs less than 2.00—a twenty-nine percentage-point increase. In contrast, freshmen who enrolled in our *socialization-focused*, academic theme-based freshman seminar were less likely to re-enroll the following fall than were freshmen not enrolled in any freshman seminar. The *socialization-focused* seminar proved equally ineffective for freshmen with high and low first-semester GPAs. We found no evidence for the expected interaction between type of freshman seminar and academic capability of student (whether academic capability was defined in terms of first-semester academic performance or in terms of SAT

Total score). Direct comparisons of high GPA freshmen in strategy- and socialization-focused, theme-based seminars showed the strategy-based seminar produced significantly higher one-year retention rates than did the socialization-focused seminar. The strategy-based seminar was also significantly more effective than the socialization-focused seminar in improving the one-year retention rate for low GPA freshmen. Supplementary analyses demonstrated that the one-year retention advantage of the strategy-based seminar over the theme-based seminar cannot be attributed to pre-existing differences between the two groups in SAT scores, high school class rank, gender, or ethnicity.

The difference in the retention impact of the two programs may be due to the fact that they approach the challenge of promoting academic integration and institutional commitment through different means. Although both approaches have their proponents (see Braxton, Milem, & Sullivan, 2000, for evidence supporting the retention effectiveness of both), the greater retention effectiveness of the strategy-based seminar may reflect the greater need of our freshmen (first-generation and commuter) to acquire competencies that give them a sense of academic efficacy in a wide range of introductory courses. Mangold, Bean, Adams, Schwab, and Lynch (2003) suggest that in institutions where social integration is relatively low, for example, commuter institutions, "academic integration appears to have the strongest positive influence on persistence" (p. 97).

Sidle and McReynolds (1999) concluded that, in terms of improving the academic success of entering students, any type of seminar is better than none at all. Our results compel us to disagree. We must also contrast these findings with the recommendation of the Boyer Commission in 1998: socialization-focused, academic theme-based seminars may *not* be selectively and exclusively more retention-effective for our more able freshmen. In our study, the strategy-based seminar appears to immunize first-time freshmen against the damaging effects of poor first-semester performance on one-year retention rates. We believe it does so by developing their learning skills and their sense of academic efficacy to an extent that enhances academic integration and institutional commitment. This account is consistent with Weiner's (1986) attribution theory in predicting that students taught strategies would be more likely to attribute poor performance to lack of application or effort on their part, "I didn't apply what I learned." These students are in a position to attribute the difficulty of the academic challenge to factors they control, such as amount of effort or choice of task strategy. As a result, those in the strategy-based seminar condition may be more motivated to return the following year because they believe that they can determine

their level of academic success. Conversely, students who had received a socialization-focused introduction to college might be more likely to attribute failure to lack of ability on their part, "I guess I'm just not that smart." An ability attribution is permanent and pervasive and—when implying low academic ability—would discourage the student with its portents of future academic failure. As a result, those in the socialization-focused, theme-based seminar condition may be less motivated to return to the academic arena the following year because they believe that they do not have the requisite academic ability.

It is important to point out that, although the strategy-based seminar may be clearly superior to the socialization-focused, academic theme-based seminar at our institution, these findings may imply that our students are uniquely in need of academic skills, rather than socialization or bonding with a faculty member around an academic theme. Other institutions whose population of students resembles ours (less selective admissions policies, first-generation college students, commuter schools with a very large percentage of freshman students working twenty hours or more at low-paying off-campus jobs) may similarly find that their students can profit from a strategy-based initiation into the college experience. We suspect that the nature of the academic integration, social integration, and institutional commitment processes at work for these students may be very different from those at work in a different student population (see Kraemer, 1997). Thus we might have anticipated that the socialization-focused, theme-based seminar model recommended by the Boyer Commission for research universities would be ill-suited to enhance retention rates for our less academically capable students. We did not anticipate, however, that the theme-based seminar would also be less effective than the strategy-based seminar for our more capable students. When we operationalized academic capability as SAT Total score rather than as first-semester academic status, we found no main effect of a median split on SAT score, but continued to find a retention advantage for those in the strategy-based seminar as compared to those in the socialization-focused seminar. What remains to be explored in future studies is to what extent student characteristics mediate the retention benefits of strategy-based seminars. It is clear from the present data that those students placed on academic probation at the end of their first semester benefit to a much greater extent from a strategy-based seminar than do freshmen who remain in good standing academically. It is especially important to explore the nature of the interaction between other student characteristics and the retention effectiveness of strategy-based and socialization-focused, theme-based seminars as the latter become the norm and "one size fits all" claims are made for the virtues of the academic socialization model.

It is possible that for a more selective, residential, research institution, the socialization-focused, theme-based seminar might fare better in fostering student retention than it did at our institution. However, our finding that a strategy-based seminar proved more retention-effective than a socialization-focused seminar for our more academically capable freshmen highlights an unarticulated assumption of the theme-based seminar. That assumption is that college freshmen possess both the intellectual maturity, the intellectual motivation, and the intellectual tools to respond constructively to the intellectual challenges of the theme-based seminar. Even at the most selective institutions, not all will be ready to learn by inquiry and to seek open intellectual horizons during their freshman year (cf. Belenky, Clinchy, Goldberger, & Tarule, 1986/1997; Perry, 1970). For many, developing the strategies they need to respond effectively to ordinary classroom challenges (e.g., text comprehension, lecture comprehension, test preparation, test taking, and time management) may confer the sense of academic efficacy that promotes a sense of legitimate membership in the academic community and the resolve to remain in that community. Correspondingly, if freshmen are faced with challenges in a theme-based seminar that they cannot meet, the experience may leave them with doubts as to the legitimacy of their membership in the academic community. Our findings, therefore, raise questions about the motivational impact of different kinds of freshman seminars that deserve to be addressed in future research.

Further efforts to explore the impact of freshman seminars must be guided by more systematic efforts to characterize the nature of the model-relevant components of those seminars. For example, if a freshman seminar includes weekly writing assignments that set the stage for class discussions, but offers no instruction in writing or discussion skills, it does not really embody a strategy-based model and should not be inadvertently described as if it did. Thus the phrase "includes a writing component" neither describes the curriculum model nor identifies the nature of the instructional activities and should be clarified. Similarly, where a freshman seminar is packaged with other courses in a learning community, information about the nature of the links among those courses is vital for determining the degree to which community develops and socialization is fostered. Where those links involve deliberate efforts to generalize the use of specific academic strategies, a strategy-based component is being implemented and socialization will be skill-oriented. Where those links involve deliberate efforts to generalize a focused theme across diverse content areas, a theme-based model is being implemented and socialization will be content-oriented. Detailed information about the instructional and learning activities that

comprise a freshman seminar are vital for determining the degree to which strategy-based and socialization-focused, theme-based seminars at other institutions produce the same results we report here. Such information will also allow an institution to profit more insightfully from the experiences of other institutions in creating its own blend of strategy-based and socialization-focused components.

Since the time that our study was conducted, some programming changes have occurred at our institution for the two seminars. The socialization-focused Freshman Seminar has been incorporated into our learning communities program. The 2000 Survey of First Year Seminars noted that the practice of including first-year seminars within learning communities at the schools surveyed had grown from 14% in the 1997 survey to 25% in 2000 (Skipper, 2002, pp. 89-90). Moreover, Hoffman, Richmond, Morrow, and Salmone (2003) have recently suggested in a qualitative study that folding freshman seminars into learning communities programs tends to enhance students' sense of belonging and thereby fosters institutional integration and persistence. Thus we would expect this change to increase the socialization impact of our theme-based seminar and to provide the opportunity to evaluate a stronger version of that model.

Our strategy-based College Success Seminar also includes new components that are expected to enhance its effectiveness. It is now a three-credit-hour course with time for additional modeling and application of learning strategies and for weekly meetings with a peer coach, who assists freshmen in mastering strategies and tailoring them to different kinds of course content. We expect these changes to further enhance the impact of the College Success Seminar and to provide the opportunity to evaluate the cost-effectiveness of these additional instructional activities. On the basis of the data reported here, the strategy-based seminar is now required for our at-risk freshmen and those who have declared no major, focusing the strong benefits of this format on those who are likely to benefit most. We continue to evaluate and modify our seminar offerings to develop a menu of freshman opportunities that allow us to respond to the continuing mandate to increase retention rates through programs that meet the needs of our first-year students.

The evolution that we have seen in our own theme-based and strategy-based freshman seminars makes it clear that any conclusions about the relative merits of either model will depend upon the particulars of its implementation. Given that hybrid programs emerge and that what one program might describe as socialization-focused, another might describe as strategy-based, some confusion is to be expected in classifying freshmen seminars. We would propose that the direct instruction, modeling,

guided participation, and feedback that is involved in teaching the skills of college-level reading, note-taking, test-taking, and time-management strategies are qualitatively distinct classroom events that can be readily identified by a trained observer. If a representative sample of classroom activities (as actually observed or as determined from a syllabus) can be classified as strategy based or not, an estimate can be made of the relative amount of class time devoted to learning strategies instruction. In light of the results we report here, we would fully expect that as the percentage of strategy-based freshman-seminar instruction increased, so too would the retention benefits of that instruction. We argue, therefore, that such information should be routinely collected and reported in any description of freshman seminar programs. Such archival data would begin to make it possible to determine the degree to which a demonstrably valuable retention component was at work in different freshman seminars at a single institution or in multiple institutions. While not definitive, our data provide persuasive evidence that the degree to which a freshman seminar is strategy based simply cannot be ignored in assessing its retention effectiveness.

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Footnotes

- ¹ A variety of terms can be used to make this fundamental distinction between types of freshmen seminars. We use the term *learning strategies models* to refer to programs that provide direct instruction, modeling, guided participation, and feedback in the use of college-level learning strategies such as the Cornell note-taking system. In contrast, we use the term *academic socialization models* to refer to programs that provide an opportunity for freshmen to explore an engaging topic under the guidance of a subject matter specialist who models the thought processes that characterize an academic approach to that topic.
- ² The natural experiment is a variant of a quasi-experimental design labeled the *posttest-only comparison group design* (cf. Riecken & Boruch, 1974, p. 115), in which participants assign themselves into two or more control and treatment conditions. Evaluations of group differences are based on measurements made after the completion of whatever intervention is provided in the different conditions. In our study, students self-assigned themselves into one of two treatment conditions or an untreated control condition, and differences among the conditions were evaluated on the basis of retention data collected at a single point after the intervention.

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